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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/525,741 03/14/00 GRIFFITHS

P 60130-391

EXAMINER

PM82/0907

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ART UNIT

PAPER NUMBER

3619

DATE MAILED:

09/07/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No. 09/525,741	Applicant(s) GRIFFITHS, PAUL JOHN	
	Examiner Paul Royal	Art Unit 3619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 August 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 08 August 2001 is: a) ☒ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on 08 August 2001 have been approved.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by *Bates* (US 3,913,940).

Bates teaches an air spring for a vehicle air suspension system comprising:

a piston (B, see examiner annotated Figure 2) attached to a longitudinal member (6) pivotally attached to a chassis component (1) for pivotal movement about an axis; and

a deformable air cell (A, see examiner annotated Figure 2) having a first end attached to the piston (B) and a second end attached to the chassis component (1), the second end having a greater diameter than the first end and is tapered between the first end and the second end and is of frustro-conical configuration, the piston moving to deform the deformable air cell.

3. Claim 4 is are rejected under 35 U.S.C. 102(b) as being clearly anticipated by *Bates* (US 3,913,940).

Bates teaches an air spring for a vehicle air suspension system comprising:

a longitudinal member (6) pivotally attached to a chassis component (1) for pivotal movement about an axis;

an axle assembly (4) mounted to the longitudinal member (6)

an air spring (11) having a frustro-conical air cell (A) and a piston (B), the air spring (11) disposed between the longitudinal member (6) and the chassis component (1), the air cell (11) having a first end attached to the piston (B) and a second end attached to the chassis component (1) and a damper (15).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Bates* (US 3,913,940) in view of *Koschinat et al.* (US 4,890,823).

Bates teaches an air spring for a vehicle air suspension system comprising:

a piston (B, see examiner annotated Figure 2) attached to a longitudinal member (6) pivotally attached to a chassis component (1) for pivotal movement about an axis.

Bates does not clearly teach a deformable air cell.

Koschinat et al. clearly teaches a deformable air cell (24) having a first end (7) attached to a piston (9) and a second end (17) for attachment to a chassis component, the second end (17) having a greater diameter than the first end (7) and is tapered between the first end (7) and the second end (17) and is of frustro-conical configuration, the piston moving to deform the deformable air cell to absorb effective pressure and tensile forces which occur during compression and rebound of the of the air suspension axles of the vehicle.

It would have been obvious to one of ordinary skill in the art at the time of the invention *to modify the air suspension system of Bates to include a* deformable air cell having a first end attached to a piston and a second end for attachment to a chassis component, the second end having a greater diameter than the first end and is tapered between the first end and the second end and is of frustro-conical configuration, the piston moving to deform the deformable air cell, *as taught by Koschinat et al.*, to absorb effective pressure and tensile forces which occur during compression and rebound of the of the air suspension axles of the vehicle.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bates (US 3,913,940) in view of *Koschinat et al.* (US 4,890,823).

Bates teaches an air spring for a vehicle air suspension system comprising:

a longitudinal member (6) pivotally attached to a chassis component (1) for pivotal movement about an axis;
an axle assembly (4) mounted to the longitudinal member (6); and
a damper (15).

Bates does not clearly teach a deformable air cell.

Koschinat et al. clearly teaches a deformable air cell (24) having a first end (7) attached to a piston (9) and a second end (17) for attachment to a chassis component, the second end (17) having a greater diameter than the first end (7) and is tapered between the first end (7) and the second end (17) and is of frustro-conical configuration, the piston moving to deform the deformable air cell to absorb effective pressure and tensile forces which occur during compression and rebound of the of the air suspension axles of the vehicle.

It would have been obvious to one of ordinary skill in the art at the time of the invention *to modify the air suspension system of Bates to include a* deformable air cell having a first end attached to a piston and a second end for attachment to a chassis component, the second end having a greater diameter than the first end and is tapered between the first end and the second end and is of frustro-conical configuration, the piston moving to deform the deformable air cell, *as taught by Koschinat et al.*, to absorb effective pressure and tensile forces which occur during compression and rebound of the of the air suspension axles of the vehicle.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Bates and Koschinat et al.*, as applied to claim 4, in view of *Smith (US 5,234,203)*.

Bates and Koschinat et al., as applied to claim 4, teach all the limitations of claim 5, including a damper (15) disposed between the axle assembly (4) and the chassis component (1), except wherein the air cell includes an anti-vacuum system and a damper extendable at a rate which allows the anti-vacuum system to equalize a pressure within the air cell with atmospheric pressure as the longitudinal member pivots about the axis from the chassis component.

Smith teaches an anti-vacuum system (90) to equalize a pressure within the air cell with atmospheric and to provide a spring which effectively cushions vibrations through a broad range of vibration frequencies.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the air suspension system of *Bates and Koschinat et al.* to include an anti-vacuum system (90) to equalize a pressure within the air cell with atmospheric, as taught by *Smith*, and to effectively cushion vibrations through a broad range of vibration frequencies.

Note, the damper (15, *Bates*) is understood to be capable of extending at a rate which allows the anti-vacuum system to equalize a pressure within the air cell with atmospheric pressure as the longitudinal member pivots about the axis away from the chassis component because it is well known to use a damper in a

suspension system to control the rate of change in distance between the frame and the suspension components.

7. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Bates* in view of *Koschinat et al.* (US 4,890,823) and *Smith* (US 5,234,203).

Bates teaches an air spring for a vehicle air suspension system comprising:

a longitudinal member (6) pivotally attached to a chassis component (1) for pivotal movement about an axis;

an axle assembly (4) mounted to the longitudinal member (6); and

a damper (15) disposed between the axle assembly (4) and the chassis component (1), the damper extendable at a rate which allows the anti-vacuum system to equalize a pressure within an air cell with atmospheric pressure as the longitudinal member pivots about the axis from the chassis component.

Bates does not clearly teach an air cell and an anti-vacuum system.

Koschinat et al. clearly teaches a deformable frustro-conical air cell (24) having a first end (7) attached to a piston (9) and a second end (17) for attachment to a chassis component, the second end (17) having a greater diameter than the first end (7) and is tapered between the first end (7) and the second end (17), the piston moving to deform the deformable air cell to absorb effective pressure and tensile forces which occur during compression and rebound of the of the air suspension axles of the vehicle.

Smith teaches an anti-vacuum system (90) to equalize a pressure within the air cell with atmospheric and to provide a spring which effectively cushions vibrations through a broad range of vibration frequencies.

It would have been obvious to one of ordinary skill in the art at the time of the invention *to modify the air suspension system of Bates to include a* deformable air cell having a first end attached to a piston and a second end for attachment to a chassis component, the second end having a greater diameter than the first end and is tapered between the first end and the second end and is of frusto-conical configuration, the piston moving to deform the deformable air cell, *as taught by Koschinat et al.*, to absorb effective pressure and tensile forces which occur during compression and rebound of the of the air suspension axles of the vehicle, and to further modify the air suspension system of *Bates and Koschinat et al.* to include an anti-vacuum system to equalize a pressure within the air cell with atmospheric, as taught by *Smith*, and to effectively cushions vibrations through a broad range of vibration frequencies.

Note, the damper (15, *Bates*) is understood to be capable of extending at a rate which allows the anti-vacuum system to equalize a pressure within the air cell with atmospheric pressure as the longitudinal member pivots about the axis away from the chassis component because it is well known to use a damper in a suspension system to control the rate of change in distance between the frame and the suspension components.

Response to Arguments

8. In response to applicant's argument that Bates (US 3,913,940) is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992).

In this case, Bates teaches a main spring 11 that is understood to function as would an air spring. It would be obvious to use the main spring of *Bates* in place of the air cell of the instant because the main spring 11 of *Bates* is understood to be the same as applicant's air cell. The Examiner points out that *Bates* teaches it's main spring is made of rubber and has metal end plates bonded to the rubber. The bonding of the metal plates to the main spring reasonably indicates the main spring has a sealed air chamber which could be understood to be an air cell. In contrast, if the metal plates had been attached to the main spring without bonding, it would be less likely there was an effort to form an air tight seal at the end of the main spring and less likely an air cell was formed. Additionally, *Bates*, Figure 2 seems to indicate the interior of the main spring is hollow which reinforces the understanding that the main spring 11 is an air cell similar to applicant's air cell.

Alternatively, the prior art of *Koschinat et al.* has been applied to claims 1-6 to make it clear that the piston and air cell having frusto-conic shape is well known.

Conclusion


9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Royal whose telephone number is 703-308-8570. The examiner can normally be reached on 8:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lanna Mai can be reached on 703-308-2486. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7687 for regular communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.


P. Royal
September 6, 2001

Paul Royal
Examiner
Art Unit 3619

LANNA MAI
SUPERVISORY PATENT EXAMINER
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